

THE ROLE OF ANTICIPATED INACTION REGRET AND FUTURE WORK SELVES IN
COLLEGE STUDENTS' INFORMATION SEEKING: EXTENDING THE THEORY OF
MOTIVATED INFORMATION MANAGEMENT

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ABSTRACT

Career counselors are valuable resources for college students who are seeking information related to their future career options. Additionally, college students may weigh specific benefits and costs of seeking information prior to deciding on an information seeking strategy. This study used the theory of motivated information management (TMIM) as a framework to examine predictions about college student's information seeking strategies when they are uncertain about their future career options. This study extends the TMIM by introducing and testing two new types of outcome expectancies: anticipated inaction regret and future work selves. Furthermore, this study adds to the growing body of literature that applies the TMIM to non-interpersonal contexts. With cross-sectional survey data from 194 undergraduate college students, this study's results show that the two new types of outcome expectancies generally functioned within the TMIM framework as TMIM predicts for outcome expectancies. Additionally, TMIM generally worked as a model for predicting college students' information seeking. The study found that an uncertainty discrepancy predicted negative affect, both positive and negative affect predicted anticipated inaction regret and future work selves, future work selves predicted efficacy, anticipated inaction regret and efficacy directly predicted information seeking, and anticipated inaction regret indirectly affected information seeking via target efficacy. Theoretical implications for the TMIM framework and practical implications related to career counselors who services to college students are discussed.

Keywords: anticipated inaction regret, future work selves, career counseling

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CHAPTER 1. INTRODUCTION AND REVIEW OF THE LITERATURE

The decision about which career path to follow is one of the challenges college students face (Morgan & Ness, 2003). College students report experiencing varying levels of emotions (e.g., anxiety, indecision) related to how certain they are about a future career path (Morgan & Ness 2003; Orndorff & Herr, 1996). With the escalating cost of higher education in the U.S., deciding on a career has become more stressful than ever before (Oreopoulos & Petronijevic, 2013). Furthermore, researchers have found that a students' career uncertainty affects his/her outlook on future career paths, how he/she pursue these careers, and his/her expectations for career growth (Counsell, 1996; Gordon & Meyer 2002; Morgan & Ness 2003).

A college student may seek guidance from career counselors to decrease his/her uncertainty and increase his/her knowledge about prospective careers (de Barros, 2015). However, when deciding to seek and manage information about an important issue, a student may imagine different expectations related to possible outcomes of the information search. These imagined expectations may lead the student to assess how efficacious he/she may be in the information seeking process, which in turn affects how he/she will seek relevant information. The *theory of motivated information management* (TMIM, Afifi & Weiner, 2004) provides context for understanding how college students manage information when faced with career-related uncertainty.

With the exception of Fowler, Gasiorek, and Afifi (2018), few studies have considered how different types of imagined or expected outcomes predict information management behavior. In the present study, TMIM is used to examine the process by which college students manage career uncertainty. Specifically, this study extends the testing of TMIM by examining two different outcome expectancies (OEs): anticipated inaction regret and future work selves.

College Students' Career Uncertainty

Students hope that attending college and finishing their education will prepare them to find a job and build a successful career (Lin, Wu, & Chen, 2015; Orndorff & Herr, 1996). Astin and colleagues (1993) found that of the over 220,000 college freshmen from across the United States, 82% reported that the number one reason for attending college was “to be able to get a better job.” Additionally, students continue to report the need for professional help to prepare for a job and future career (Astin, Korn, & Riggs, 1993). For instance, a national survey with data collected from 96 institutions from the American Association of State Colleges and Universities found that nearly half of their incoming freshmen class were interested in receiving assistance in career and education-related decisions (Hannah & Robinson, 1990). Weissberg, Berentsen, Cote, Varvey, and Health (1982) found that 72% of students were interested in learning how to prepare for their careers; 77% were interested in developing job-search skills; and 80% needed help in finding work opportunities related to their major and desired career path.

College students experience many challenges in regard to education and future career paths (Kalleberg, Reskin, & Hudson, 2000; Mills & Blossfeld, 2003; Morgan & Ness, 2003). The acceleration and unpredictability of global market changes (e.g., economics, market processes), economic recessions, and international competition place added pressure on students' career decision processes (e.g., Danziger & Ratner, 2010; Heinz, 2009; Tomasik & Silbereisen, 2012). Furthermore, researchers note that uncertain employment conditions (e.g., risks of job loss, under employment, etc.) are common in today's societies (e.g., Hofäcker, Buchholz, & Blossfeld, 2010; Kalleberg, 2011; Körner, Lechner, Pavlova, & Silbereisen, 2015).

While students are interested in career planning and report the need for assistance in this decision process, not all students experience the same level of uncertainty concerning a future

career. Researchers have found that some students experience higher uncertainty than others. For instance, Welsh and Schmitt-Wilson (2013) examined the relationship between executive functions (e.g., goal directed behaviors that stem from the prefrontal cortex of the brain), identity achievement, and career decision making in college students. To examine the relationship among the three factors, they utilized self-report measures of identity status, career commitment, executive function behaviors, and intelligence (e.g., verbal intelligence). The results of their study suggest that there is a positive relationship between identity achievement, executive functions (e.g., working memory, task completion, etc.), and certainty about future career plans. On the other hand, they found a positive relationship between intelligence scores (i.e., vocabulary scores) and career certainty. The authors suggest that low verbal intelligence and poor executive functioning may impair identity development and lead to greater career uncertainty.

Other researchers have found relationships between college students' career certainty and engagement in career planning. Orndorff and Herr (1996) examined the similarities and differences between students who have declared a major (i.e., declared students) and students who have yet to declare a major (i.e., undeclared students). They specifically examined these students' career uncertainty and engagement in the career decision process. They found that declared students in their study were more certain about their future careers and had higher levels of career decidedness (i.e., comfort, certainty, and knowledge about a career choice) and major decidedness (i.e., comfort, certainty, and knowledge about a major). Generally, declared students were more certain about their major and career. These students also did more research and became more involved in learning about possible future careers than undeclared students. Declared students were also more interested in learning more about themselves and being active

in their career development process (e.g., exploring different options, planning, decision-making) than undeclared students. Thus, students who are more certain about their major may also be more certain about their career decisions. As a result, these students are more likely to engage planning their career (e.g., seeing a professional, seeking internship opportunities).

Students' certainty about their future career is also linked to psychological outcomes. Daniels, Stewart, Stupnisky, Perry, and LoVerso (2011) examined students' perceived control, learning environments (e.g., participation in student orientation events), and career anxiety. Two distinct types of perceived control were examined: primary control and secondary control. According to Rothbaum, Weisz, and Snyder (1982) primary control describes an individual's ability to change his/her environment to make his/her goals and the environment align, while secondary control describes changing an individual's cognitions to align with the environment. An example of primary control is a student who wants to work toward being a chef, so she works at a restaurant part time to get experience with cooking. This example illustrates how the student has a goal and is working toward it by making activities align with the goal. An example of secondary control is when a student does not enjoy her work but psychologically changes her cognitions about it.

Researchers found a link between primary control and career indecision (Daniels, Clifton, Perry, Mandzuk, & Hall, 2006). For instance, students who are exploring possible career options can exert primary control by applying for different internship opportunities, thus reducing career indecision. Likewise, researchers also found a link between secondary control and career anxiety (Daniels et al., 2006). For instance, students who have made up their mind about a career path can exert secondary control to change their cognitions and adjust to their career decision, thus reducing career anxiety.

Overall, deciding on a career holds great significance. For instance, researchers have found that preparing for and establishing a career are key developmental tasks of young adults (e.g., college students) (Schoon & Silbereisen, 2009). However, globalization and the polarization of labor markets has led to uncertainty in regard to the transition from education to work and initial career development (e.g., Heinz, 2009). Students may experience uncertainty about future career paths and this uncertainty may affect the extent to which they are involved in the career decision process (e.g., Orndorff & Herr, 1996) and the levels of anxiety they experience (e.g., Daniels et al., 2011). Some researchers like Krumboltz and Worthington (1999) believe that making a career decision is essential to personal development and happiness. Furthermore, going through the career decision process (e.g., exploring career options and making the decision) is important in achieving an individual's goals in life (Mandeville, 1993).

Regret

Some researchers have defined *regret* as a cognitively based negative emotion that is associated with shame and rumination (Landman, 1993; Niedenthal, Tangney, & Gavanski, 1994; Zeelenberg, 1999). For instance, we may experience regret when we reflect upon our life and come to the realization that our current circumstances may have been better if we had done something different in the past. If we had anticipated these feelings of regret before making particular decisions, we might have been prompted to act or make decisions to prevent a regretful outcome. Anticipating the experience of future regret may impact an individual's decision-making process (Zeelenberg, 1999).

Researchers have found that individuals have a general tendency to want to avoid regret (Loomes & Sugden, 1982; Richard, van der Pligt & de Vries, 1996; Simonson, 1992; Bell, 1982). When confronted with a number of choices, individuals tend to choose the option that

they think will bring the least amount of regret (Bell, 1982; Loomes & Sugden, 1982). For instance, Simonson (1992) examined how anticipating making wrong decisions influences a consumer's decision to purchase products from different brands (e.g., popular brands or less popular brands) of difference prices (e.g., cheap or expensive). When participants in this study were prompted to anticipate how they would feel if they made the wrong purchase decision, they were more likely to choose the product that would produce the least amount of regret, which was the expensive, more popular brand product. This study illustrates how the anticipation of a negative outcome may influence consumer's decisions to purchase certain products. In this study, consumers seemed more willing to spend more money and purchase a product that was more familiar than a cheaper, less popular alternative in order to minimize future regrets.

Zeelenberg and colleagues (1996) examined the consequences of regret aversion and expected feedback in a risky decision-making scenario (e.g., gambling). Participants were asked to select to one of two types of risk options (e.g., risky gamble and safe gamble) and then randomly assigned to one of three types of feedback (e.g., choice only, risky, and safe). The risky gamble promised an increased payoff and decreased likelihood of winning, whereas the safe gamble promised decreased payoff and increased likelihood of winning. The three feedback conditions varied by the results they would learn about. For instance, participants would only learn about the results of their chosen option (e.g., risky or safe) in the *choice only feedback* condition. Participants would always learn about the results of the risky option but have a choice to learn about the outcome of the safe option in the *risky feedback* condition. The *safe feedback* condition allowed participants to learn the results of the safe option and they could choose whether they wanted to learn about the results of the risky option. Participants in both the risky and safe gamble options mentioned how the anticipation of regret influenced the type of

feedback they wanted. The researchers found that participants in the study who opted for either the risky gamble or the safe gamble were influenced by the feedback they wanted. For instance, some of the participants who chose the risky gamble expressed that they did not want to receive feedback because they did not want to regret making the wrong choice. Overall, this study found that anticipated regret plays a role in the kind of feedback participants wanted.

Regret Theory

Developed by economists, *regret theory* proposes that when decision makers have to make a decision with uncertain outcomes, the anticipation of regret plays a role in their decision (Bell, 1982; Loomes & Sugden, 1982). The first assumption of regret theory is that individuals make comparisons between the actual outcome of a decision and the possible outcomes if alternative decisions have been made and experience emotions as a result. For example, Zeelenberg and colleagues (1996) explained that if an individual were presented with two options (e.g., option A and option B) and chooses option A, he/she may experience regret if he/she learns afterward that option B would have been better. In contrast, this individual may rejoice if the alternative option (i.e., option B) led to a worse outcome.

Arkes, Kung, and Hutzler (2002) found that customers who decide not to purchase an item may experience regret when learning later on that the price of the item has increased. For example, a student who decides to forgo purchasing a laptop may experience regret when learning later on that the price of the laptop has increased. Alternatively, in accordance with regret theory (Bell, 1982; Loomes & Sugden, 1982), the student may rejoice in forgoing the original purchase if he/she learns afterwards that the laptop has gone on sale.

The second assumption of regret theory is that individuals anticipate the emotional consequences (e.g., regret, shame, happiness, satisfaction) of their decisions (Bell, 1982; Loomes

& Sugden, 1982; Zeelenberg et al., 1996). As a result, these emotional consequences are considered in their decision-making process (Zeelenberg et al., 1996). Thus, the individual who has to decide between option A or option B must realize and be open to the emotional consequences that may follow either choice. The theory argues that decision makers want to maximize the positive emotions (e.g., happiness, satisfaction, pride) they feel after deciding, and want minimize decisions that may lead to negative emotions (e.g., regret, shame, embarrassment).

Anticipated Regret

Anticipated regret is defined as individual's imagining or realizing the regret they may feel from making certain decisions (Zeelenberg, 1999; Zeelenberg, Beattie, van der Pligt, & de Vries, 1996). Janis and Mann (1977) explained how individual's fear or tendency to avoid future regret may affect current behaviors and choices. They state that, "Anticipatory regret is a convenient generic term to refer to the main psychological effects of the various worries that beset a decision maker before any losses actually materialize" (Janis & Mann, 1977, p. 222). Anticipating regret may lead an individual to think carefully or scrutinize information thoroughly before finalizing decisions (Janis & Mann, 1977). Furthermore, Sandberg and Conner (2008) have found evidence supporting anticipated regret as a motivator for people's actions.

Researchers have noted that the distinction between action and inaction has been a focal point in regret literature (Brewer, DeFrank, & Gilkey, 2016). Action regret can be attributed to things that an individual wished he/she had done (Sandberg, Hutter, Richetin, & Conner, 2016). Conversely, inaction regret can be attributed to things that an individual did not do but wished he/she had done (Sandberg et al., 2016). Researchers suggest that regret is influenced more by inaction than action (Kahneman, 1995). One of the main concerns of regret literature is the

distinction between action and inaction regret (Gilovich & Medev, 1995). *Anticipated action regret* is defined as the extent to which an individual anticipates feeling regret for engaging in a certain behavior (Ajzen & Sheikh, 2013). *Anticipated inaction regret* is defined as the extent to which an individual anticipates feelings of regret from not engaging in a behavior (Brewer et al., 2016). The present study will focus on anticipated inaction regret.

Possible Selves

Researchers Markus and Nurius (1986) defined *possible selves* as a “type of self-knowledge [that] pertains to how individuals think about their potential and about their future” (p. 954). Possible selves are based on an individual’s past and future conceptualizations of themselves (Markus & Nurius, 1986). These possible selves are distinct from one another, but connected to each other (Markus & Nurius, 1986). Markus and Nurius (1986) view possible selves as conscious, mental representations of an individual’s goals, intentions, and apprehensions. Possible selves are the “essential link between the self-concept and motivation” because they shape the meaning, understanding, and direction of the aforementioned cognitive manifestations (Markus & Nurius, 1986, p. 954).

Possible selves are believed to influence the motivation process positively and negatively (Markus & Ruvolo, 1989). *Positive possible selves* are selves that individuals strive for and ideally want to become in the future. When individuals cognitively construct and are able to envision their positive possible self, they are motivated to take necessary steps (e.g., planning, strategizing, gathering information) to make that possible self a reality (Markus & Ruvolo, 1989). Examples of positive possible selves include, but are not limited to “the successful self, the creative self, the rich self, the thin self, or the loved and admired self” (Markus & Nurius, 1986, p. 954). Similarly, there are *negative possible selves* that individuals are fearful of and

wishes to avoid. When individuals are cognitively aroused by negative possible selves, plans and strategies to avoid such end-states are activated to help them reach a desirable end-state (Markus & Ruvolo, 1989). Examples of negative possible selves include, but are not limited to “the alone self, the depressed self, the incompetent self, the alcoholic self, the unemployed self, or the bag lady self” (Markus & Nurius, 1986, p. 954).

Future Work Selves

The concept of *future work selves* is based on Markus and Ruvolo’s (1989) concept of possible selves. Future work selves include an individual’s hopes, goals, and aspirations for his/her future work life (Strauss, Griffin, & Parker, 2012). Strauss and colleagues (2012) proposed three reasons for why future work selves are distinct from possible selves. Firstly, they proposed that future work selves are exclusively future-oriented in comparisons to possible selves that can refer to past, present, and future selves (Markus & Nurius, 1986; Strauss et al., 2012). Strauss et al. (2012) argue that this exclusively future-oriented representation of an individual’s work self enables him/her to take risks, challenge himself/herself, and be proactive in molding his/her career. Secondly, Strauss et al. (2012) proposed that future work selves are positive. Strauss et al. (2012) explain that this is a departure from Markus and Nurius’s (1986) negative and positive possible selves because individuals have the desire to construct and preserve positive representations of themselves at work (Ashforth, 2011). Furthermore, positive future selves are more likely than negative future selves to regulate behavior toward a specific end-state (Elliot, Sheldon, & Church, 1997). Thirdly, the future work self specifically refers to possible selves in the work setting and specifically affects individuals’ behaviors in that setting (Strauss et al., 2012).

Strauss and colleagues (2012) drew upon three explanatory frameworks to illustrate the link between future selves, goal setting, and motivation to achieve goals. The first explanatory framework, self-regulation theory, explains how the disparity between individuals' current self and ideal future work self motivates them to set goals and work toward a future that he/she wants (Bandura, 2001). The second explanatory framework is based on theories regarding the function of possible selves in identity construction (Dunkel, 2000; Dunkel & Anthi, 2001). Possible selves allow individuals to construct their identity by actively exploring, adapting, and redefining themselves so they can continuously work toward their best possible future (Strauss et al., 2012). The third framework explains how individuals construct mental images of their desired future and these images highlight what they might need in order to reach that desired future (e.g., skills needed to accomplish a future role) (Taylor, Pham, Rivkin, & Armor, 1998). If individuals do not currently have the skills needed for a future role, this discrepancy serves as a motivator to develop such skills (Edwards, 1996).

Guan and colleagues (2017) conducted two longitudinal studies examining the reciprocal effects between future work selves and career exploration. In the first study, participants completed questionnaires at two different time points (i.e., Time 1 and Time 2) that were eight weeks apart. Questionnaires at both time points were related to future work self and proactive career behaviors (e.g., career exploration). Results from the first study indicated that future work self and proactive career behaviors reciprocally influenced each other such that career exploration at Time 1 significantly affected future work self at Time 2, and Time 1 future work self significantly affected Time 2 career exploration. In the second study, participants completed questionnaires about future work self, career exploration, and career adaptability at three different time points over a period of twelve weeks. Questions addressing career adaptability

examined participants' perception of control over their career, career curiosity, career concern, and career confidence. Results from the second study indicated that career exploration leads to changes to future work self, but not the other way around and that career adaptability is the link between future work self and career exploration. The researchers proposed that future work selves motivate the development of adaptive work-related abilities and career exploration may encourage the development of such abilities.

Strauss and colleagues (2012) conducted three studies to examine how salient future work selves motivated proactive career behaviors (e.g., actively seeking career advice). The first study asked participants to imagine his/her ideal future work self and rate the salience of that imagined self before assessing their consideration for future consequences, career identity (i.e., commitment), career aspirations, and proactive career behaviors. Results from the first study indicated that the salience of future work self predicted participant's proactive career behavior after controlling for career identity, future orientation, and age. Results from the second study indicated that future work self salience had a stronger influence on proactive career behavior than career identity and future time orientation over a 6-month time period. Results from the third study indicated that participant's elaboration (e.g., high versus low) of their future work self motivated proactive career behavior only when participant's future work self salience was also high. Strauss and colleagues (2012) proposed that their studies illustrate how discrepancies between current work self and future work self salience motivates proactive behavior.

The TMIM

Afifi and Weiner's (2004) *theory of motivated information management* (TMIM) is a framework that explains the decision process individuals go through to manage information in close relationships. The TMIM has been applied to individuals' decisions to manage information

about personally salient issues such as sexual health (Afifi & Weiner, 2006), financial uncertainty (Fowler et al., 2018), and organ donor status (Afifi, Morgan, Stephenson, Morse, Harrison, Reichert, & Long, 2006). Afifi and Weiner's (2004) TMIM shares connections to and extends frameworks such as Johnson and Meischke's (1993) *comprehensive model of information seeking*, Badura's (1997) *efficacy theory*, and Brasher's (2001) *theory of uncertainty management*.

The TMIM is characterized by three sequential phases: the *interpretation phase*, *evaluation phase*, and *decision phase* (Afifi & Weiner, 2004). In the interpretation phase, individuals become aware of a discrepancy between the amount of existing uncertainty they have about a personally significant issue and the amount of uncertainty they desire about that issue (this gap is known as an *uncertainty discrepancy*) (Afifi & Weiner, 2004). This discrepant state prompts an emotional response (Afifi & Weiner, 2004). The original TMIM proposed that the uncertainty discrepancy would be followed by feelings of anxiety (Afifi & Weiner, 2004). For example, college students who are concerned about their future career path could experience uncertainty related to this issue. Following Afifi and Weiner's (2004) original proposition of TMIM, the gap between the amount of uncertainty students have about their future career and the level of uncertainty they want to have could lead to the experience of anxiety. In a later revision of the TMIM, Afifi and Morse (2009) were influenced by the tenets of appraisal theory (e.g., Lazarus 1991a, 1991b) and argued that uncertainty discrepancy can result in a range of emotions (e.g., anger, envy, hope) in addition to anxiety.

The second phase of the TMIM is the evaluation phase, where individuals assess the outcome expectancies (OEs) from the information management process and the use of particular information strategies (Afifi & Weiner, 2004). The evaluation phase consists of *outcome*

assessments and *efficacy assessments*. Outcome assessments are the evaluations of the benefits and costs an individual expects as a result of utilizing information seeking strategies. For instance, when a college student decides to seek information from a career counselor, he/she might expect certain benefits (e.g., clarifies future coursework) and certain costs (e.g., time spent speaking to the counselor). Additionally, the importance of the possible outcome (OI) and the probability of the outcome (OP) happening are also taken into consideration. For example, if a college student is unsure about his/her career path, he/she might believe that getting clarification on this issue is highly important. Similarly, this college student might assess how likely it would be that seeking information from a career counselor would result in clarification of a possible career path.

Efficacy assessments are an individual's belief that he/she can reduce feelings of anxiety through information seeking/avoidance (Afifi & Weiner, 2004). The three components of efficacy assessments are coping efficacy, communication efficacy, and target efficacy (Afifi & Weiner, 2004). Coping efficacy describes individuals' confidence in the resources they have (e.g., social/emotional support) to manage or cope with the information-seeking process and the results they expect from the information-seeking strategy they use (Afifi & Weiner, 2004). In some situations, an individual might believe he/she is readily able to manage process of searching for information and its outcomes, where in other situations, they may think that it is too challenging to manage. The second efficacy component is communication efficacy. It is defined as is an individual's perception of his or her communicative ability to effectively use a particular strategy. Researchers have found that an individual's belief that he/she can communicate successfully in this process predicts whether he/she will engage in or avoid communication (e.g., Warren, 1995; Hale, & Trumbetta, 1996). Lastly, target efficacy is the

belief that source of the information is able to provide the desired information honestly and accurately (Afifi & Weiner, 2004). For example, a student's belief that his/her career counselor has access to relevant information (target ability) and is willing to provide it (target honesty) may predict the student's willingness to set up a counseling appointment.

The third phase of the TMIM is the decision phase (Afifi & Weiner, 2004). This phase explains how the affect and thought processes involved in the earlier phases leads to the decision to utilize a particular information management strategy. TMIM focuses on three major outcomes: seeking relevant information, avoiding relevant information, or cognitively reappraising the need for uncertainty management. For instance, if an individual decides to seek relevant information, he/she can utilize a passive strategy (e.g., observe), active strategy (i.e., get information from a third party), or an interactive strategy (i.e., speak with the source directly). In some situations, individuals may choose to avoid relevant information (e.g., not seek information for a long duration of time or change their behavior to avoid encountering information about a topic). Another possible outcome could be an individual's cognitive reappraisal or reworking of his/her thoughts about how uncertain he/she is (i.e., estimates of uncertainty).

The TMIM, Anticipated Inaction Regret, and Future Work Selves

This study posits that anticipated regret and possible selves can be seen as different types of OEs that may influence individuals' decision-making process when managing information. Firstly, an individual may anticipate the feeling of regret from not seeking information. This study tests anticipated inaction regret as an OE that influences the information seeking process. For example, a student may anticipate regret from not speaking to a counselor for advice. Expectancy value theorist Edwards (1954) suggests that the perceived likelihood and perceived severity of future outcomes motivates behavior. In the TMIM, the perceived likelihood of

anticipating inaction regret and the perceived severity of this outcome might also motivate behaviors in the decision phase of the process.

Secondly, an individuals' expectations about who he/she will be as a result of seeking and managing information might be another outcome of the evaluation process. Specifically, the TMIM states that individuals consider the costs and benefits of their information seeking behaviors when assessing potential outcomes (Afifi & Weiner, 2004). Past research using the theory has typically examined the valence of the costs and benefits (e.g., Crowley & High, 2018; Lancaster et al., 2016). For example, positive outcome assessments consist of low costs and high benefits whereas negative outcome assessments consist of high costs and low benefits. To date, few studies have considered different types of OEs as predictors of information management behavior (for an exception, see Fowler et al., 2018). Researchers also have yet to consider how an individual's cognitive manifestations of his/her future work selves predicts information management behaviors.

Possible selves shape an individual's expectation of who he/she might be in the future and influences the motivation of behavior (Markus & Nurius, 1986). The concept of future work selves is based on Markus and Nurius's (1986) concept of possible selves. Strauss et al. (2012) note that these two concepts are similar because they are "cognitive representations of who individuals hope to become in the future" (p. 581). Furthermore, future work selves have the potential to shape an individual's career because they can "potentially stretch individuals' aspirations and broaden their creative thinking about future possibilities" (Strauss & Parker, 2012, p. 581). However, future work selves (Strauss et al., 2012) differs from the original conceptualization of possible selves (Markus & Nurius, 1986) because future work selves are defined strictly as positive, "hoped for" future selves. While researchers like Strauss et al. (2012)

looked at future work selves in relation to career development and management, researchers have not provided clear examples of positive future work selves.

Researchers have found that in contexts of high uncertainty (e.g., economic and financial crisis) people fear unemployment (de Barros, 2015), but still express the need for having a meaningful career (Duarte, 2009; Savickas, 2005, 2013). Additionally, researchers have examined the relationship between happiness and career success and found that both were related to work satisfaction (e.g., Proyer, Annen, Eggimann, Schneider, & Ruch, 2012). Researchers also note that it is important for young adults to consult with a career counselor to develop realistic career goals when uncertain about their future career path (Lechner, Tomasik, & Silbereisen, 2016). Thus, in the context of possible selves, future work selves (i.e., work selves that one strives for) can be characterized as being employed, having a meaningful career, being happy, successful, and having a career that addresses personal goals. Additionally, I propose that future work selves can also include having a career that is a good fit and is a career that the person prefers.

The Present Study

The present study posits that anticipated inaction regret and future work selves are different types of outcome expectancies of speaking with a career counselor. Furthermore, these two concepts may influence a student's information management efforts when his/her future career is uncertain. To date, researchers have yet to examine these concepts in the TMIM. The present study extends the current theory of motivated information management to by examining

- 1) anticipated inaction regret as an OE that influences the information management process and
- 2) future work selves as expected outcomes of the information management process.

Researchers throughout the years have found support for the college context as a place that is filled with the unknown, and specifically noted that college students experience a great deal of uncertainty (Baumgardner, 1982; Kalleberg, Reskin, & Hudson, 2000; Mills & Blossfeld, 2003; Morgan & Ness, 2003; Orndorff & Herr, 1996). One area in which college students experience uncertainty is in career path decisions (Garrison, Yunkyoung Loh, & Ali, 2017; Howie, 2012; Pisarik, Rowell, & Thompson, 2017; Welsh & Schmitt-Wilson, 2013). Although research on the communicative management of information in college and career contexts is limited (for an exception, see Crowley & High, 2018), researchers have found that college students' career uncertainty is harmful to career development, personal growth, and psychological adjustment (Daniels, Stewart, Stupnisky, Perry, & LoVerso, 2011). To date, only Crowley and High (2018) tested the TMIM in the context of parents' seeking information to assist in their child's career development. However, researchers have yet to examine the child's (i.e., a student's) information management behaviors in career planning, and the factors that motivate those behaviors.

This study will examine the role of the information seeker (e.g., the student) in the process of managing information about future careers. According to the TMIM, when a student is aware that there is a gap between the level of uncertainty he/she has about an important issue (e.g., future career) and the amount of uncertainty he/she desires about that issue, he/she will experience an emotional response (Afifi & Morse, 2009; Afifi & Weiner, 2004). Given the importance and uncertainty inherent in this topic (Garrison et al., 2017; Howie, 2012; Pisarik et al., 2017; Welsh & Schmitt-Wilson, 2013), it seems likely that students would experience negative emotional responses rather than positive emotional responses as a result of the uncertainty discrepancy. Thus, this study proposes the following hypothesis:

Hypothesis 1: When thinking about a future career, an uncertainty discrepancy will lead to increased negative affect and decreased positive affect.

TMIM posits that when an individual is aware of this uncertainty discrepancy, an emotional response will be triggered, and negative emotions lead to negative outcome expectancies (Afifi & Morse, 2009). In contrast, positive emotional responses will lead to positive outcome expectancies. In the case of college students seeking information from a career counselor about a future career, it is likely that if students experience negative affect from an uncertainty discrepancy, they will anticipate regret as a result of not speaking with a career counselor. Conversely, if students experience positive affect from an uncertainty discrepancy, they will not anticipate regret as a result of not speaking with a career counselor. Thus, this study proposes the following hypothesis:

Hypothesis 2: Negative affect brought on by an uncertainty discrepancy regarding a future career will be positively related to anticipated inaction regret as an outcome expectancy, whereas positive emotions will be negatively related to anticipated inaction regret.

Although previous research has not examined how the emotional responses to the uncertainty discrepancy affects an individual's perceptions of his/her future work selves, Afifi and Morse (2009) did propose that negative emotions lead to negative OEs in the information management process. As such, this study proposes the following hypotheses:

Hypothesis 3: Negative affect brought on by an uncertainty discrepancy regarding a future career will be negatively related to expectations of future work selves after talking to a career counselor, while positive affect will be positively related to expectations of future work selves.

TMIM presumes that there is a “a directional influence between these two assessments and argues for efficacy as a partial mediator of outcome assessments’ effects on information-management decisions” (Afifi & Weiner, 2004, p. 180). While anticipated regret in general motivates actions (Sandberg & Connor, 2008) and greater anticipated inaction regret predicts stronger intentions and behaviors compared to anticipated action regret (Brewer et al. 2016), it is unclear whether anticipated inaction regret would affect efficacy. To clarify the nature of this association, the following research question is posed:

Research Question 1: Does anticipated inaction regret OE indirectly affect information seeking via efficacy?

Research suggests that individuals want to avoid regret (Bell, 1982; Loomes & Sugden, 1982; Richard et al., 1996; Simonson, 1992). Researchers have found that the desire to avoid regret may affect an individual’s decisions and choices (Simonson, 1992). Sandberg and Conner (2008) found support for regret as a motivator for people’s actions. Additionally, Brewer and colleagues (2016) found that anticipated inaction regret was associated with higher likelihood of engaging in behaviors that individuals thought they would regret. Taken together, the research suggests that there could be a direct connection from anticipated inaction regret to information seeking (i.e., not via efficacy). To examine the relationship between anticipated inaction regret in the context of speaking with a career counselor, the following research question is posed:

Research Question 2: Does anticipated inaction regret OE directly affect information seeking?

Researchers have found support for self-efficacy as a motivator for proactive behaviors (Frese, Garst, & Fay, 2007; Kanfer, Wanberg, & Kantrowitz, 2001). Strauss and Parker (2012) found support for future work selves as a reason for proactive behavior. To my knowledge, there

has been no research linking future work selves as a predictor of efficacy. Thus, this study proposes:

Hypothesis 4: More positive future work selves as an expected outcome of speaking with a career counselor will be positively associated with efficacy.

According to TMIM, an individual's perception of overall efficacy is assessed and taken into consideration when deciding to seek information (Afifi & Weiner, 2004). When an individual is confident that he/she can successfully enact an information management strategy (i.e., efficacy assessment is high), the chances of enacting that information management strategy is high. Likewise, when an individual is not confident that he/she can successfully enact in an information management strategy (i.e., efficacy assessment is low), the chances of enacting that strategy is low. Thus, this study proposes the following hypothesis:

Hypothesis 5: Higher efficacy will be positively related to seeking information from a career counselor.

CHAPTER 2. METHODS

Participants

One hundred ninety-four undergraduate students from the University of Hawai‘i at Mānoa took part in this study. Over half of the participants were female ($n = 116$, 59.8%), with 38.1% male ($n = 74$), 1% of participants who were outside of the gender binary ($n = 2$), and 1% of participants choosing not to disclose their gender ($n = 2$). Participants’ age range was from 18–70 ($M = 20.45$, $SD = 5.28$) and 5.7% of participants did not disclose their age ($n = 11$). Participants were of freshman (45.9%), sophomore (23.7%), junior (16.5%), senior (13.4%), or “other” (0.5%) class standing. Participants were majoring in business (27.8%), science, math and technology (21.1%), health and medicine (20.1%), social sciences (11.9%), arts and humanities (7.2%), undeclared/exploratory (4.6%), and 7.2% selected “other.” Participants were allowed to select more than one of their ethnic backgrounds. Participants represented Asian/Pacific Islander (74.7%), White (30.4%), Hispanic or Latino (11.9%), Black or African American (2.6%), Native American/American Indian (1.5%), or “other” (2.6%) ethnicities.

Participants were recruited through the Communicology Department’s Sona research sign-up website. In exchange for their participation, students had the opportunity to earn course credit or extra credit in their Communicology courses. Participants provided consent for this study by signing the consent form that was provided in the beginning of the study.

Procedures

This was a cross-sectional survey about college students’ information seeking and information management processes when thinking about speaking to a career counselor about future career options. Participation in this study was voluntary and the students provided consent

before proceeding with the study. The completion of the questionnaire took no longer than thirty minutes.

Instrumentation

All measures were adapted from previous studies of the TMIM and related concepts (e.g., anticipated inaction regret and possible selves). Unless otherwise indicated, all items were assessed on a 5-point Likert scale where 1 (*Strongly disagree*) and 5 (*Strongly agree*). All items were coded such that higher scores indicate “more” of the phenomenon in question.

Issue importance. The TMIM attempts to predict information management behavior only for personally important issues. To gauge the importance of the topic of future careers and assess whether this scope condition was met, participants were asked how important the topic of their future career was to them on a 5-point Likert scale from 1 (*Not at all important*) to 5 (*Extremely important*). The topic was considered to be highly important by participants ($M = 4.63$, $SD = 0.69$).

Students’ awareness of career counseling services. To check students’ awareness of career counseling services on campus, students were asked to respond either “yes” or “no” to the following question: “Do you know that career counseling services are available here at the University of Hawai‘i at Mānoa?” More than three-quarters (79.4%) of the participants reported being aware of career counseling services on campus ($M = 1.21$, $SD = 0.41$).

Information about career counseling. To inform students about the career counseling services on campus, students were prompted to read the following: “Career counselors at the University of Hawai‘i at Mānoa are available to assist you with your academic and career goals. They can assist you with developing a career path/goals, developing your resume and cover letter, and a variety of other career-related topics. You can find out more about the career

counseling services available at the University of Hawai‘i at Mānoa by visiting their website at <http://manoa.hawaii.edu/careercenter/> or visiting them in person at the Mānoa Career Center in the Queen Lili‘uokalani Center for Student Services, Room 212.”

Uncertainty discrepancy. The gap between participants’ current and desired level of uncertainty about their future career options was measured with a one item Likert-scale question: “From a scale of -3 (*Much less*) to 3 (*Much more*), I currently wish I knew _____ than I know right now about my future career options.” Overall, 89.2% wanted to know more than they knew at the time they answered the question; 0.5% wanted to know less than they knew; and 9.8% wanted to know exactly the same amount as they knew. Because the focus was on the gap between current and desired levels of uncertainty, scores were recoded as absolute values. Therefore, a score of -3 was recoded as 3, a score of -2 was recoded as 2, and a score of -1 was recoded as 1. The possible scores ranged from 0 to 3, with higher scores indicating more uncertainty discrepancy ($M = 1.98$, $SD = 1.02$). The largest sub-group of participants (40.7%) reported a 3 (indicating highest uncertainty discrepancy), 25.8% of participants reported a 2 (indicating moderately high uncertainty discrepancy), 23.2% of participants reported a 1 (indicating low uncertainty discrepancy), and 9.8% of participants reported a 0 (indicating no uncertainty discrepancy).

Affect. To measure participants’ affective responses to uncertainty discrepancy, a subset of the Positive and Negative Affect Schedule (PANAS-SF) was used (Watson, Clark, & Tellegen, 1988). Six negative emotions (distressed, upset, scared, irritable, ashamed, nervous) and four positive emotions (interested, excited, determined, attentive) were selected to be part of the 10-item subscale. Participants were asked to “consider the difference between how much you want to know about your future career and how much you already know about your future

career” and rate the degree to which you experienced the 10 possible emotional responses to this uncertainty discrepancy. The anchors recommended by Watson et al. (1988) were used (1 = *Very slightly/Not at all*; 2 = *A little*; 3 = *Moderately*; 4 = *Quite a bit*; 5 = *Very much*). This measure demonstrated high reliability for positive affect ($M = 3.86$, $SD = 0.80$, $\alpha = .84$) and negative affect ($M = 2.23$, $SD = 0.85$, $\alpha = .84$).

Anticipated inaction regret outcome expectancies. Anticipated inaction regret was measured with 3 items adapted from Lazuras, Barkoukis, and Tsorbatzoudis (2015) designed to reflect anticipated negative affect (“If I do not speak with a career counselor, I will regret it,” “If I do not speak with a career counselor, I will feel disappointed in myself,” “If I do not speak with a career counselor, I will feel distressed”). Participants indicated how much they agreed/disagreed with these items measuring anticipated inaction regret using a 5-point Likert-scale from 1 (*Strongly disagree*) to 5 (*Strongly agree*). Higher scores reflected greater anticipated inaction regret from not speaking with a career counselor. This measure demonstrated high reliability for anticipated inaction regret ($M = 3.00$, $SD = 1.20$, $\alpha = .91$).

Future work self outcome expectancies. Participant’s vision of the self in relation to a future career was measured as an OE that follows from speaking with a career counselor. The 7-item measure included questions such as “If I speak with a career counselor, it is likely that I will be employed after college” and “If I speak with a career counselor, it is likely that I will have a meaningful career after college.” Participants indicated how much they agreed/disagreed with these items measuring future work selves using a 5-point Likert-scale from 1 (*Strongly disagree*) to 5 (*Strongly agree*). Higher scores indicated a more positive future work self. This measure demonstrated high reliability for future work self as an outcome expectancy ($M = 3.70$, $SD = 0.91$, $\alpha = .94$).

Efficacy. TMIM suggests that three distinct efficacy assessments predict how an individual decides to manage information: communication efficacy, coping efficacy, and target efficacy (Fowler & Afifi, 2011). The *communication efficacy* items were adapted from Afifi et al. (2007) to measure participants' perceived level of skill and comfort with talking to a career counselor about future careers. A 3-item measure included questions such as "I feel like I have the ability to approach a career counselor to ask about possible career options." The *coping efficacy measure* was created to measure participants' ability to handle discovering how prepared they are for their desired future career. A 3-item measure included questions such as "I feel I can manage feedback about my preparation for possible career options." Finally, the target efficacy measure was created to assess participants' perceptions of their target person's willingness and ability to provide them with honest and adequate information. Target efficacy assessments were captured with a 2-item measure (e.g., "I feel that a career counselor could adequately provide me with information about future career options"). Participants indicated how much they agreed/disagreed with these measures of efficacy using a 5-point Likert-scale from 1 (*Strongly disagree*) to 5 (*Strongly agree*). This measure demonstrated high reliability for communication efficacy ($M = 3.51$, $SD = 1.04$, $\alpha = .87$) and coping efficacy ($M = 4.10$, $SD = 0.77$, $\alpha = .84$). This measure demonstrated adequate reliability for target efficacy ($M = 4.14$, $SD = 0.72$, $\alpha = .70$).

Information seeking. Three items measured participants' likelihood of seeking information about their future career with a career counselor (i.e., "How likely would you make an appointment to speak with a career counselor about possible career options?") using a 5-point Likert-scale from 1 (*Highly unlikely*) to 5 (*Highly likely*). This measure demonstrated high reliability for information seeking ($M = 3.41$, $SD = 1.09$, $\alpha = .92$).

Value of career counseling. A baseline assessment of participants' attitudes toward career counseling was assessed with the value of career counseling subscale of Rochlen, Mohr, and Hargrove's (1999) Attitudes Toward Career Counseling Scale. The 8-item subscale consists assesses the value of career counseling (e.g., "Career counseling is a valuable resource in making a career choice"). Participants indicated whether they disagreed or agreed to each item on a 5-point Likert-scale from 1 (*Disagree*) to 5 (*Agree*). This measure demonstrated high reliability for value of career counseling ($M = 4.14$, $SD = 0.65$, $\alpha = .89$).

Future work self salience. The salience of participants' future work selves was measured with a subscale of Strauss et al.'s (2012) future work selves scale. Participants were asked to imagine what they hoped their future would be like in relation to their work and answered 5 items (e.g., "This future is very easy for me to imagine") from a scale of 1 (*Strongly disagree*) to 5 (*Strongly agree*). Higher scores reflected greater future work self salience. This measure demonstrated high reliability for future work self salience ($M = 3.35$, $SD = 1.00$, $\alpha = .92$).

CHAPTER 3. RESULTS

A simple linear regression was calculated to test H1, which predicted that an uncertainty discrepancy about participants' future career would be associated with increased negative affect and decreased positive affect. The overall regression was not significant, $F(1, 191) = 2.69$, $p = .103$, with an R^2 of .014. Uncertainty discrepancy was not a significant predictor of positive affect, $b = 0.09$, $p = .103$. A simple linear regression was also calculated to predict negative affect based on uncertainty discrepancy. The overall regression was statistically significant, $F(1, 191) = 5.53$, $p = .020$, with an R^2 of .028. Uncertainty discrepancy was a significant predictor of negative affect, $b = 0.14$, $p = .020$. Thus, H1 was partially supported.

A multiple linear regression was calculated to test H2, which predicted that negative emotions brought on by an uncertainty discrepancy would be positively associated with anticipated inaction regret, whereas positive emotions brought on by an uncertainty discrepancy would be negatively related to anticipated inaction regret. The overall regression in which positive affect and negative affect predicted anticipated inaction regret, was significant, $F(2, 191) = 17.47$, $p < .001$, with an R^2 of .146. Negative affect was a significant predictor of anticipated inaction regret, $b = 0.47$, $p < .001$. Contrary to my prediction, there was a significant positive relationship between positive affect and anticipated inaction regret, $b = 0.25$, $p < .001$. Thus, H2 was partially supported.

A multiple linear regression was calculated to test H3, which predicted that negative affect brought on by an uncertainty discrepancy would be negatively related to expectations of future work selves and positive affect brought on by an uncertainty discrepancy would be positively related to expectations of future work selves. The overall regression in which positive affect and negative affect predicted future work selves was significant, $F(2, 191) = 14.31$, $p <$

.001, with an R^2 of .130. Positive affect was a significant predictor of future work selves, $b = 0.36, p < .001$. However, contrary to my prediction, there was a significant positive relationship between negative affect and future work selves, $b = 0.16, p = .033$. Thus, H3 was partially supported.

The PROCESS macro was used to answer RQ1, which asked whether anticipated action regret as an outcome expectancy of speaking with a career counselor indirectly affected information seeking via efficacy. Model 4 was used to test the indirect effect of X (anticipated inaction regret) on Y (information seeking) through M (communication efficacy, coping efficacy, and target efficacy as parallel mediators). Anticipated inaction regret was not a significant predictor of communication efficacy, $b = 0.01, p = .755$ or coping efficacy, $b = -0.01, p = .751$. However, anticipated inaction regret was a significant predictor of target efficacy, $b = 0.10, p = .021$. Furthermore, coping efficacy was not a significant predictor of information seeking, $b = 0.05, p = .642$. However, communication efficacy, $b = 0.21, p = .006$ and target efficacy, $b = 0.34, p < .001$ were significant predictors of information seeking.

An examination of indirect effects indicated that there was not an indirect effect for communication efficacy, 95% CI [-0.19, 0.038]. Similarly, there was not an indirect effect for coping efficacy, 95% CI [-0.019, 0.008]. The indirect effect for communication and coping efficacy were not significant because the confidence interval includes 0. There was, however, a significant indirect for target efficacy, 95% CI [0.007, 0.082]. The indirect effect for target efficacy was significant because the confidence interval did not include 0.

A multiple linear regression was calculated to test H4, which predicted a positive association between future work selves and three types of efficacy: communication, coping, and target. Separate analyses were run for each of the three types of efficacy as the dependent

variable. Firstly, the overall regression in which future work selves and anticipated inaction regret predicted communication efficacy was not significant, $F(2, 191) = 2.58, p = .079$, with an R^2 of .016. However, future work selves was a significant predictor of communication efficacy, $b = 0.21, p = .026$. Anticipated inaction regret was not a significant predictor of communication efficacy, $b = -0.07, p = .371$.

Secondly, the overall regression in which future work selves and anticipated inaction regret predicted coping efficacy was significant, $F(2, 191) = 3.22, p = .042$. Future work selves was a significant predictor of coping efficacy, $b = 0.18, p = .013$. Anticipated inaction regret was not a significant predictor of coping efficacy, $b = -0.09, p = .116$.

Thirdly, the overall regression in which future work selves and anticipated inaction regret predicted target efficacy was significant, $F(2, 191) = 10.39, p < .001$. Future work selves was a significant predictor of target efficacy, $b = 0.32, p < .001$. In this analysis, anticipated inaction regret was not a significant predictor of target efficacy, $b = -0.06, p = .229$. Overall, H4 was supported.

A multiple linear regression was calculated to test H5 and RQ2, which respectively predicted a positive association between three types of efficacy (communication, coping, target) and information seeking, and asked whether anticipated inaction regret directly affected information seeking. The overall regression in which anticipated inaction regret, communication efficacy, coping efficacy, and target efficacy predicted information seeking was significant, $F(4, 189) = 20.90, p < .001$. Anticipated inaction regret was a significant predictor of information seeking, $b = 0.35, p < .001$. Communication efficacy was a significant predictor of information seeking, $b = 0.21, p = .006$. Target efficacy was also a significant predictor of information seeking, $b = 0.22, p = .001$. Contrary to my prediction, however, coping efficacy was not a

significant predictor of information seeking, $p = .642$. Thus, H5 was partially supported and RQ2 was supported.

To better understand how students feel about career counseling, their attitudes toward career counseling was assessed. This assessment provided descriptive information as to whether career counseling mattered to the participants or not. Participants reported valuing career counseling highly ($M = 4.14$, $SD = 0.65$, on a 5-point scale).

CHAPTER 4. DISCUSSION

This study used the TMIM (Afifi & Morse, 2009; Afifi & Weiner, 2004) as a guiding framework to examine predictions about how specific types of outcome expectancies influence college student's information seeking strategies when they are uncertain about their future career options. In doing so, I also introduced and tested extensions of the TMIM by including two new types of outcome expectancies: anticipated inaction regret and future (work) selves.

Additionally, few studies have examined the TMIM outside of interpersonal information management behaviors (for an exception, see Crowley & High, 2018). This study adds to the growing body of literature that applies the TMIM to non-interpersonal contexts.

Summary of Results

Five hypotheses were tested, and two research questions were addressed in the present study. First, results of hypothesis testing found that as participants' uncertainty discrepancy about their future career increased, so did their experiences of negative affect. Second, the more participants experience of negative and positive affect, the more they anticipated that they would regret not speaking with a career counselor. Third, as participants' experience of negative and positive affect increased, so did their expectations of their imagined future work selves of speaking with a career counselor. Fourth, as participants' positive expectation of their imagined future work self increased, so did communication efficacy, coping efficacy, and target efficacy. Fifth, as anticipated inaction regret, communication efficacy, and target efficacy increased, so did information seeking. Sixth, anticipated inaction regret indirectly affected information seeking via target efficacy.

Contexts of uncertainty. The results of testing H1, which predicted that increased uncertainty discrepancy would lead to increased negative affect and decreased positive affect,

partially supported my predictions about what would happen in the *interpretation phase* of the TMIM (Afifi & Weiner, 2004) in the context of college students managing information about future career options. The interpretation phase of the TMIM is characterized by individuals' awareness about the gap between how much they currently know about an important issue and how much they want to know about the issue (Afifi & Weiner, 2004). The gap is theorized to prompt a variety of emotional responses such as "anger, fear, disgust, jealousy, envy, and hope" (Afifi & Morse, 2009, pp. 94). Consistent with my prediction, I found that the discrepancy between how much students currently wish they knew and how much they knew about possible career options predicted negative affect as a response. However, contrary to my prediction, no relationship was found between uncertainty discrepancy and positive affect.

The contexts in which uncertainty discrepancies are measured might explain why uncertainty inconsistently predicts positive affect. The original TMIM proposed that uncertainty discrepancy only aroused feelings of anxiety (Afifi & Weiner, 2004). However, Afifi and Morse's (2009) revision of the TMIM argued that it is possible for uncertainty discrepancy to arouse a larger variety of affective responses than just anxiety. Many of the arguments for positive affect as a response to uncertainty have been made by researchers who have examined uncertainty in health contexts (e.g., Brashers, Goldsmith, & Hsieh, 2002; Davis, 1960; Maikranz, Steele, Dreyer, Stratman, & Bovaird, 2007; Wonghongkul, Moore, Musil, Schneider, & Deimling, 2000). People with illness-related uncertainty may desire to decrease uncertainty that arouses negative affect or to increase uncertainty to give them a sense of hope or optimism (Brashers et al., 2002). Additionally, researchers have found that hopeful thinking enables a physically ill person to stay focused on recuperating, motivated to begin and adhere to treatment, and maximize health outcomes (Snyder, Hoza, Pelham, Rapoff, Ware, Danovsky, Highberger,

Rubinstein, & Stahl, 1997). In health contexts, it can be advantageous for people to respond to illness related uncertainty with positive feelings such as optimism and hope. The development of new treatments helps people with diseases that were previously labeled as “automatic death sentence[s]” (e.g., HIV/AIDS) (Winjberg, 2000, pp. 14) live longer, healthier lives. So, there may be good reason for people with uncertain futures to have hope and there are opportunities for people who are living with illnesses to receive treatment and recover from their illness.

However, in the context of college students and career counseling, it may not be reasonable for students who are uncertain about their future career options to have the same kind of hope and optimism as people with illness-related uncertainty. Especially with an unpredictable job market (e.g., Hofäcker et al., 2010; Kalleberg, 2011; Körner et al., 2015) and the rapid growth of nonstandard employment (e.g., temporary, on-call, contracted employment) (Kalleberg et al., 2000), it is plausible that any kind of uncertainty discrepancy about future career options may arouse only negative affective responses.

Contextual operationalization of positive affect. In the *evaluation phase* of the TMIM, people weigh the potential benefits and costs of utilizing certain information seeking strategies (Afifi & Weiner, 2004). TMIM posits that negative affect (from the initial uncertainty discrepancy) leads to negative outcome expectancies and vice versa (Afifi & Morse, 2009). The current study tested anticipated inaction regret as a specific type of outcome expectancy of (not) seeking information from a career counselor. Results were consistent with my prediction that negative affect brought on by an uncertainty discrepancy would be a significant, positive predictor of anticipated inaction regret. However, contrary to my prediction that positive affect would be a *negative* predictor of anticipated inaction regret, positive affect brought on by an

uncertainty discrepancy was found to be a significant, *positive* predictor of anticipated inaction regret.

Together, results from the current study show that the more people have an emotional reaction, the more they express anticipated inaction regret. While previous studies have focused on the emotions that follow anticipated inaction regret such as contemplation and longing (e.g., Gilovich, Medvec, & Kahneman, 1998; Kedia & Hilton, 2011), results from this study are important because they provide insight into an area that researchers have yet to focus on: the emotions that lead to anticipated inaction regret.

One possible explanation for finding that positive affect predicts anticipated inaction regret is the way that positive affect was operationalized in this study, which is different than previous studies. Previous studies have operationalized positive affect as optimism or hope for the future (e.g., Brashers, 2001; Fowler et al., 2018). For example, in Fowler and Afifi's (2011) study that applied the TMIM to adult children's discussions about aging parents' caregiving preferences, positive affect items included emotional states such as feeling "calm", "thoughtful", "secure", "encouraged", "inspired", and "happy." However, the current study measured positive affect with four items from the Positive and Negative Affect Schedule (PANAS-SF, Watson et al., 1988): *interested*, *excited*, *determined*, and *attentive*. While all the items are positively valenced, they also seem to be oriented toward engagement.

In the context of college students and career counseling, it is possible that this operationalization of positive affect can thus be interpreted as measuring students' *engagement* in the information management process. Viewing the positive affect measurement as engagement, this study found that the more engaged students were in the information management process, the more they would anticipate regret from not seeking information.

Students who feel engaged are interested in/excited to/determined about/attentive to managing information about their future career. The student's emotional and mental investment in this process is a reasonable explanation for their anticipation of regret if they did not seek information.

Negative affect and value of career counseling. Findings from the current study did not support Afifi and Morse's (2009) argument that negative emotions lead to negative OEs in the information management process. The current study tested future work selves (i.e., positive, future-oriented representations of oneself at work) as a type of outcome expectancy of seeking information from a career counselor. In line with my prediction, the more positive affect participants experienced (i.e., the more participants felt engaged in the information management process as a result of their uncertainty discrepancy), the more they expected positive future work selves if they spoke with a career counselor. However, contrary to my prediction, the more participants experienced negative affect (e.g., felt distressed, nervous, irritable), the more they *also* expected positive future work selves if they spoke with a career counselor.

A possible explanation of these results is that when individuals feel negative affect in response to the gap in their knowledge about their future career options, they look to their career counselor for guidance and accurate information. Perhaps the more participants felt distressed, nervous, or irritable about the gap in their knowledge, the more they felt that a career counselor's advice could help to fill in that knowledge gap, enabling them to imagine a positive, future oriented representation of themselves in their future work. If this is the case, these findings imply that participants believe speaking with a career counselor will be helpful. While researchers have yet to examine the direct relationship between individuals' negative affect and assessment of

target efficacy specifically, the results from the current study show a positive relationship between target efficacy and negative affect.

Overall, participants in the current study valued career counseling highly ($M = 4.14$, $SD = 0.65$ on a 5-point scale). This means that the majority of these participants believe career counseling to be important and beneficial, believe career counselors are helpful, and would not hesitate to meet with a career counselor when they need assistance. Thus, it is possible that when participants experience negative emotions from the level of uncertainty they currently have about their future career and the level of knowledge they want to have about their future career, they believe their career counselor will provide helpful information. This belief/confidence in their career counselor could be a reason for their positive expectations of their future work selves in this context.

Indirect effect of target efficacy. While researchers have found that anticipated regret motivates actions (Sandberg & Connor, 2008), how anticipated inaction regret would affect efficacy had not been researched before. To clarify whether anticipated action regret as an outcome expectancy of speaking with a career counselor indirectly affected information seeking via efficacy. I found a significant, positive, and indirect effect of target efficacy on anticipated inaction regret and information seeking, but did not find significant indirect effects for communication and coping efficacy.

This is the first study to specifically introduce anticipated inaction regret as a type of outcome expectancy. Although there are no studies that have specifically looked at the indirect effect of anticipated regret on information seeking via efficacy, these results show that the more participants anticipate that they will regret not speaking with a career counselor, the more they believe the career counselor will be helpful; in turn, the more they believe the career counselor

will be helpful, the more likely they will be to seek information from the career counselor. These results also show that if participants anticipate regret from not speaking with a career counselor, it does not matter whether they believe they can cope with the information they receive (i.e., coping efficacy) or believe they can effectively communicate with the career counselor (i.e., communication efficacy). These results suggest that what matters in predicting students' information seeking in this context is students' belief that the career counselor will be helpful in providing desired information accurately and honestly (i.e., target efficacy).

Future work selves as a predictor of efficacy. Findings from this study support Afifi and Weiner's (2004) proposition that outcome expectancies and efficacy assessments are related to each other. The results show that the more participants expected positive future work selves if they spoke with a career counselor, the more efficacious they felt in the information seeking process. The results have shown that future work selves were positively associated with all three types of efficacy: communication, coping, and target efficacy. One possible interpretation of the results is the more participants can expect/visualize their future work self as an outcome of speaking with a career counselor, the more they can feel confident about managing the information they receive (i.e., coping efficacy), the more they believe they can communicate effectively when they speak with a career counselor (i.e., communication efficacy), and the more they believe the career counselor to be helpful (i.e., target efficacy). To my knowledge, this is the first study to examine future work selves as a type of outcome expectancy in the information management process. Past research has found that future work selves can be a predictor of proactive behavior (Strauss & Parker, 2012). The results from the current study are complimentary to past research because the current study found that future work selves predicts how efficacious people feel in the information seeking process, which can affect their behavior

thereafter. The results from this study look encouraging for the role of future work selves as a predictor of efficacy in the context of college students and career counseling.

Anticipated inaction regret and information seeking. Previous research suggested that there could be a direct connection from anticipated inaction regret to information seeking (i.e., not via efficacy) (Brewer et al., 2016; Sandberg & Conner, 2008); however, this relationship had not been tested yet. In the present study, I found a significant, positive, and direct effect of anticipated inaction regret on information seeking. The results show that the more participants anticipated regret from not speaking with a career counselor, the more likely they were to seek information from a career counselor. While previous studies suggested that there could be a direct connection between anticipated inaction regret and information seeking (e.g., Brewer et al., 2016; Sandberg & Conner, 2008; Simonson, 1992), this is the first study to my knowledge to demonstrate a direct connection between anticipated inaction regret and information seeking in the context of college students and career counseling. This finding adds to previous research that has found anticipated inaction regret to predict behavior (e.g., Sandberg & Connor, 2008). This is also the first study to date that examines anticipated inaction regret as a type of outcome expectancy in the TMIM's information management process. This study demonstrated that anticipated inaction regret performed like the TMIM framework said an outcome expectancy should. The results suggest that anticipated inaction regret plays an important role in predicting information seeking in the context of college students and career counseling.

Performance of different types of efficacy. I predicted that higher efficacy would be positively related to seeking information from a career counselor and my results partially supported my predictions about what would happen in the *decision phase* of the TMIM (Afifi & Weiner, 2004). Consistent with my prediction, I found that the more participants believed they

could communicate effectively with a career counselor (i.e., the more communication efficacy they had) and the more they believed career counselors to be helpful (i.e., higher target efficacy), the more likely they were to seek information from a career counselor. However, contrary to my prediction, participants' belief that they could manage the information they receive from a career counselor (i.e., coping efficacy) was not a significant predictor of information seeking.

In previous studies, coping efficacy has also failed to predict information seeking (e.g., Afifi & Weiner, 2006; Fowler & Afifi, 2011; Lancaster et al., 2016). In the current study, coping efficacy was assessed by asking participants if they could cope with/manage feedback (whether it be positive or negative) about their possible career options from a career counselor. Most participants reported that they could cope with the information they might receive from a career counselor and the results demonstrated relatively little variation in their responses ($M = 4.06$, $SD = 0.77$ on a 5-point scale). The results suggest that in the context of college students and career counseling, it may be unlikely for career counselors to provide feedback that students cannot cope with. A possible reason for this could be that while the topic of future career options is an important issue for students, it may not be as "taboo" as issues such as managing information about a partner's romantic history (Lancaster et al., 2016). Taboo topics are issues that tend to be avoided or labeled as off-limits as discussing them may lead to negative consequences for the persons involved (Lancaster et al., 2016). In the case of managing relational information, individual's ability to cope with learning potentially relationship-threatening information may significantly affect their decision to seek information and how they seek information.

However, in the context of managing feedback about future career options, it could have been difficult for participants to imagine receiving adverse, career-threatening information that they could not cope with. Furthermore, students tend seek out career counseling to clarify their

options and receive guidance. Thus, students seemed to perceive the likelihood of receiving potentially career-threatening information (e.g., information that sets them on a completely different path) to be low, which in turn, may explain their consistent reporting of being highly able to cope with the information they could receive from a career counselor. Overall, with the majority of participants reporting high scores on coping efficacy and relatively little variation in responses, there may be a ceiling effect, which could be why there is no relationship between coping efficacy and information seeking.

Theoretical Implications

The results of this study, which applied TMIM to college students and career counseling, affirms TMIM's utility as a framework for understanding information management in contexts of uncertainty. It also extends the theory in a novel way. While previous studies conceptualized and measured outcome expectancies by assessing the expected valence (i.e., positive or negative) of the information participants believed they would receive, this study extends the TMIM's framework by including two new types of outcome expectancies: anticipated inaction regret and future (work) selves.

Generally, the two new types of outcome expectancies functioned within the TMIM framework as TMIM predicts for outcome expectancies. The TMIM posits that negative affect leads to negative outcome expectancies and positive affect leads to positive outcome expectancies (Afifi & Morse, 2009). In the current study, the results show that negative affect predicts anticipated inaction regret and positive affect predicts (positive perceptions of a) future work self. Additionally, in the TMIM, the benefits and costs associated with outcome expectancies predicts how confident individuals feel in their ability to successfully produce an outcome (Afifi & Weiner, 2004). In the current study, anticipated inaction regret predicted target

efficacy and future work selves predicted communication, coping, and target efficacy, which in turn, predicted information seeking.

The one exception to the performance of outcome expectancies (relative to predictions made by TMIM) was that the more positive/engaged students felt in the information seeking process, the more they anticipated regret from not speaking with a career counselor. This finding contrasts with Afifi and Morse's (2009) argument that positive emotions lead to positive outcome expectancies in the information seeking process: these findings show that positive emotions (as a result of an initial uncertainty discrepancy) predicted a negative outcome expectancy, anticipated inaction regret.

Additionally, results showed that the more anticipated inaction regret students experienced, the more likely they were to seek information. In terms of TMIM, which says that individuals generally assess potential benefits and costs of seeking information (Afifi & Weiner, 2004), anticipated inaction regret could be seen as a specific cost of not seeking information. In the context of the current study, college students seem to consider the potential experience of anticipating regret from not seeking information when they decide on an information seeking strategy.

Future work selves also functioned within the TMIM framework as I had anticipated. For instance, the more participants expected positive future work selves if they spoke with a career counselor, the more efficacious they felt in the information seeking process. The results from this study demonstrate that future work selves can be seen as an expected outcome of the information seeking process and can predict how efficacious individuals believe the source of the information is, as well as how efficacious they feel about communicating and managing the information they desire. While the original TMIM framework argued that benefits and costs are two general forms

of outcome expectancies (Afifi & Weiner, 2004), I found that future work selves can be a specific, beneficial expected outcome. The results showed that the more participants expect a positive image of their future work self from speaking with a career counselor, the more it predicts their communication, coping, and target efficacy assessments. Overall, my findings regarding future work selves demonstrates that individuals can take specific benefits into account when they seek information.

Lastly, the revised TMIM (Afifi & Morse, 2009) argued that an uncertainty discrepancy predict positive and negative affect; however, there was no relationship between uncertainty discrepancy and positive affect in this study. At least in the context of college students and career counseling, uncertainty discrepancy predicted only negative affect. As discussed above, the association between uncertainty discrepancy and only negative affect might be a result of the specific context of this study. These findings suggest that the revised theory's argument that an uncertainty discrepancy predict both positive and negative affect may not apply to all research contexts. Furthermore, the current theory may need to be modified to include greater flexibility in the affective responses that result from an uncertainty discrepancy. Thus, in specific contexts, it is possible that uncertainty discrepancy can significantly arouse only one type of affective response (e.g., either positive or negative) rather than both.

Practical Implications

This study also offers practical insights into how college students manage information in the face of career uncertainty. First, this study has specific implications for career counselors providing services to college students. The results suggest that it is important for students to believe that their career counselors will be efficacious (e.g., honest, accurate) in providing them with information. Thus, when working with college students who are uncertain about their future

career options, it is important for career counselors to emphasize that they are providing honest feedback (e.g., on resume and cover letters) and up-to-date information (e.g., about the job market).

Second, the information seeking process tested in this study is built on the assumption that students are aware that these resources are available to them. In the current study, 79.4% of students reported that they are aware that career counseling services are available at their university. While the majority of students in this sample were aware of their university's career counseling services, this may not be the case at other universities. Therefore, it may be important for universities in general or career counselors specifically to make students aware that these resources are available to them.

Lastly, my findings also indicate that the more students expected positive future work selves if they spoke with a career counselor, the more efficacious they felt in the information seeking process. This study demonstrates that the more students can envision a positive version of themselves in their future career with the help of a career counselor, the more they can feel efficacious in making that future work self a reality.

Limitations and Future Directions

While this study offers important insights about college students' information management under career uncertainty and tests two new types of outcome expectancies in the TMIM, it also has several limitations. First, the study uses cross-sectional data, which means that the results should be interpreted cautiously. This study shows that variables are associated but causality cannot be determined from the data.

Second, data were analyzed in a series of individual regressions. These analyses do not account for relationships between variables that came before or after them in the proposed

model. Therefore, the results of this study may have demonstrated stronger relationships compared to an overall analysis of the variables. For example, in the process of running separate regressions, the results demonstrated a significant relationship between anticipated inaction regret and target efficacy when future work self was not included in the analysis. Conversely, anticipated inaction regret was not a significant predictor of target efficacy when future work self was included in the analysis. The differences in these results would not occur in a path analysis. Future researchers should use path analysis to examine how the variables in the TMIM framework predict information seeking in the context of college students and career counseling instead of a series of regressions. Path analysis will be able to determine the pattern of relationships among all the variables in the study at once rather than analyzing the relationships piece by piece.

Third, there is a wide range of potential career paths that the sample represents. Some participants' majors may set them on a very specific career path (e.g., nursing, engineering), while others' career paths may be more flexible (e.g., psychology, English). This is a potential limitation of this study because the certainty or uncertainty associated with participants' majors can affect the level of knowledge they currently have and desire about their future career. Furthermore, participants' initial uncertainty discrepancy can affect subsequent aspects of their information seeking process. For instance, it is highly likely that a student who becomes a nursing major has the desire and expectation to become a nurse after graduating with that degree. If that is the case, the gap between how much the nursing student currently knows and wants to know about their future career it is likely to be very small. This small level of uncertainty discrepancy may affect their affective response, their evaluation of their outcome expectancies, and whether or not they seek information from a career counselor.

In contrast, participants whose majors do not set them on a specific career path may experience a larger discrepancy between the knowledge they have and desire to have about their future career compared to participants whose majors set them on a specific career path. Comparisons between students' college majors could be a potential topic of interest in future studies because it could help to highlight existing circumstances that may affect the information seeking process. Additionally, an investigation and comparison of how students' college majors influence their expectations of/decision to seek information from a career counselor can provide universities with insight into specific subgroups of the student population that may need or benefit from career counseling services. Thus, future studies could examine how participants from a specific major or a range of majors manage information about their future career and whether this differs by major or major type.

Finally, in terms of future directions, the concepts of anticipated inaction regret and future selves could be applied to future studies in an array of contexts. Researchers could investigate the role of anticipated inaction regret and future selves in the context of patients seeking information about terminal illness or in the context of seeking information about a partner's fidelity in the relationship. The way these individuals think about the regret they may anticipate from not seeking information (i.e., their anticipated inaction regret) and the type of person they want to be or avoid being in the future (i.e., their future selves) as a result of seeking information, may affect whether they seek information or not. These concepts may prompt individuals to evaluate the results of their inactions and evaluate what their future self could look like in these contexts and provide insight into specific the evaluations that affect the information seeking process.

Table 1. *Descriptive Statistics, Reliability Coefficients, and Variable Intercorrelations*

		Items	<i>M</i>	<i>SD</i>	α	Higher scores denote	1	2	3	4	5	6	7	8	9	10	11	12
1.	Issue Importance	1	4.63	0.69	-	Greater issue importance	-											
2.	Awareness of Career Counseling	2	1.21	0.41	-	More awareness of career counseling	-.04	-										
3.	Uncertainty Discrepancy	1	1.98	1.02	-	Larger uncertainty discrepancy	.23***	.16**	-									
4.	Positive Affect	4	3.86	0.80	0.84	More positive affect	.30***	-.03	.12	-								
5.	Negative Affect	6	2.23	0.85	0.84	More negative affect	.18**	.10	.17**	.10	-							
6.	Anticipated Inaction Regret OEs	3	3.00	1.20	0.91	Grater anticipated inaction regret OEs	.07	-.00	.13	.21***	.35***	-						
7.	Future Work Self OEs	7	3.70	0.91	0.94	Greater future work self OEs	.17**	-.07	.17**	.33***	.18**	.52***	-					
8.	Communication Efficacy	3	3.51	1.04	0.87	Higher levels of communication efficacy	-.02	-.24***	-.11	.20***	-.21***	.02	.15**	-				
9.	Coping Efficacy	3	4.10	0.77	0.84	Higher levels of coping efficacy	.10	-.69	.04	.33***	-.13	-.02	.14**	.52***	-			
10.	Target Efficacy	2	4.14	0.72	0.70	Higher levels of target efficacy	.16**	-.01	.10	.38***	.07	.17**	.45***	.28***	.32***	-		
11.	Information Seeking	3	3.41	1.09	0.92	Higher likelihood of information seeking	.05	-.10	.12	.34***	.02	.43***	.45***	.29***	.20***	.35***	-	
12.	Value of Career Counseling	8	4.14	0.65	0.89	Greater value of career counseling	.09	-.19***	.09	.32***	-.06	.27***	.54***	.35***	.34***	.57***	.50***	-
13.	Future Work Self Salience	5	3.35	1.00	0.92	Greater future work self salience	.09	-.141	-.09	.21***	-.26***	-.11	.11	.39***	.30***	.18**	.16**	.20**

Note. OE = outcome expectancy.

*** $p < .001$, ** $p < .01$, * $p < 0.5$.

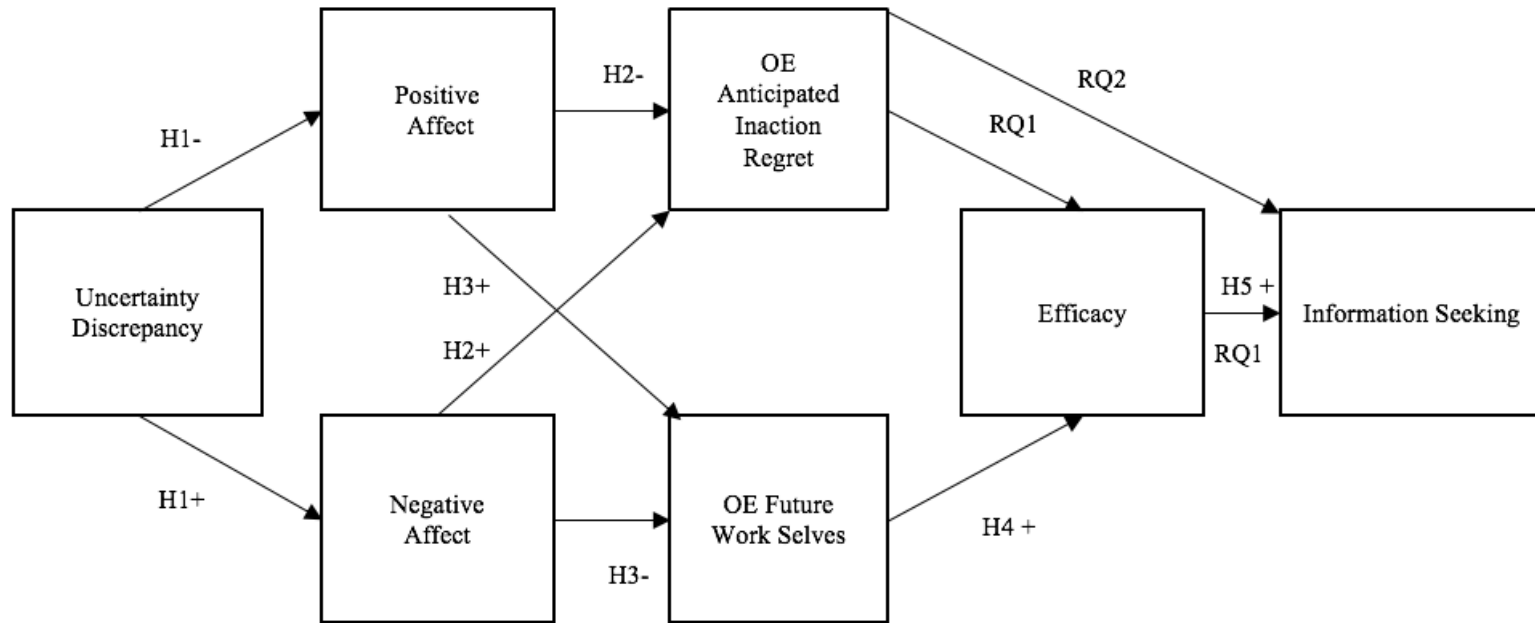


Figure 1. Proposed model of hypothesized relationships between TMIM variables.

APPENDIX A
Consent Form

**University of Hawai'i
Consent to Participate in a Research Project**

Aloha! You are invited to take part in a research study about students' perceptions of career counseling. I, Jeanna Chi, am a graduate student at the University of Hawai'i at Mānoa (UHM) in the Department of Communicology. As part of the requirements for earning my graduate degree, I am doing a research project.

What am I being asked to do?

If you participate in this project, you will be asked to answer a brief survey.

Taking part in this study is your choice.

Your participation in this project is completely voluntary. You may stop participating at any time. If you stop being in the study, there will be no penalty or loss to you.

Why is this study being done?

The purpose of my project is to examine students' perceptions of career counseling. I am asking you to participate because you are a student at the University of Hawai'i at Mānoa.

What will happen if I decide to take part in this study?

The survey will consist of multiple-choice questions. Completing the survey will take approximately 30 minutes. Approximately 300 individuals will participate in this research project.

What are the risks and benefits of taking part in this study?

There is little risk to you in participating in this project. You can stop taking the survey or you can withdraw from the project altogether. The survey can be accessed through the Department of Communicology SONA website.

There will be no direct benefit to you for taking part in this survey. The findings from this project may help better understand college students' perceptions of career counseling.

Confidentiality and Privacy:

I will not ask you for any personal information, such as your name or address. Please do not include any personal information in your survey responses. I will keep all study data secure in a locked filing cabinet in a locked office/encrypted on a password protected computer. Only my University of Hawai'i advisor and I will have access to the information. Other agencies that have legal permission have the right to review research records. The University of Hawai'i Human Studies Program has the right to review research records for this study.

Compensation:

You will receive 0.5 SONA research credits for participating in this research project.

Future Research Studies:

Even after removing identifiers, the data from this study will not be used or distributed for future research studies.

Questions: If you have any questions about this study, please call or email me at jchi@hawaii.edu or (808) 956-8202. You can also contact the faculty member assisting with this study, Dr. **Jessica Gasiorek** at gasiorek@hawaii.edu or (808) 956-8407. You may contact the UH Human Studies Program at (808) 956-5007 or by e-mail at uhirb@hawaii.edu to discuss problems, concerns, and questions; obtain information; or offer input with an informed individual who is unaffiliated with the specific research protocol. Please visit <http://go.hawaii.edu/jRd> for more information on your rights as a research participant.

To Access the Survey: Please continue by clicking the arrow below. Moving on to the first page of the survey will be considered as your consent to participate in this study.

Please print a copy of this page for your reference.

Mahalo!

APPENDIX B

Instrumentation

INSTRUCTIONS: Read the following statements and select the answers that best apply to you.

Issue Importance

From a scale of 1 (Not at all important) to 5 (Extremely important), how important is the topic of your future career to you?

Student's Awareness of Career Counseling

Do you know that career counseling services are available here at the University of Hawai'i at Mānoa?

- ☐ Yes
- ☐ No

Information about Career Counseling

Please read the following information. When you are done reading, click the bottom arrow to continue.

Career counselors at the University of Hawai‘i at Mānoa are available to assist you with your academic and career goals. They can assist you with developing a career path/goals, developing your resume and cover letter, and a variety of other career-related topics. You can find out more about the career counseling services available at the University of Hawai‘i at Mānoa by visiting their website at <http://manoa.hawaii.edu/careercenter/> or visiting them in person at the Mānoa Career Center in the Queen Lili‘uokalani Center for Student Services, Room 212.

Uncertainty Discrepancy

From a scale of -3 (Much less) to 3 (Much more), I currently wish I knew _____ than I know right now about my possible career options.

[illegible]

Affect

Consider the **difference between how much you want to know about your possible career options and how much you already know** about your possible career options.

Now, rate the degree to which you experienced the following **emotional responses** to this difference.

- 1 = Very slightly/Not at all
2 = A little
3 = Moderately
4 = Quite a bit
5 = Very much

1. Interested
2. Distressed
3. Excited
4. Upset
5. Scared
6. Irritable
7. Ashamed
8. Nervous
9. Determined
10. Attentive

Anticipated Inaction Regret Outcome Expectancies

For each of the following statements, please select the answer that best applies to you from a scale of 1 (Strongly disagree) to 5 (Strongly agree).

If I do not speak with a career counselor about possible career options, . . .

1. . . .I will regret it.
2. . . .I will feel disappointed in myself.
3. . . .I will feel distressed.

Future Work Selves Outcome Expectancies

Read the following statements and select the answer that best applies to you from a scale of 1 (Strongly disagree) to 5 (Strongly agree).

If I speak with a career counselor about possible career options, . . .

1. . . .it is more likely that I will be employed after college.
2. . . .it is more likely that I will have a meaningful career after college.
3. . . .it is more likely that I will be happy in my future career.
4. . . .it is more likely that I will be successful in my future career.
5. . . .it is more likely that my future career will address my goals.
6. . . .it is more likely that my future career will be a good fit for me.
7. . . .it is more likely that I will have a career that I prefer.

Efficacy

INSTRUCTIONS: Read the following statements and select the answer that best applies to you from 1 (Strongly disagree) to 5 (Strongly agree).

Communication Efficacy:

1. I feel like I have the ability to approach a career counselor to ask about possible career options.
2. I know what I need to say to successfully discuss possible career options with a career counselor.

3. I know how to talk to a career counselor about possible career options.

Coping Efficacy:

1. I feel I can manage feedback about my preparation for possible career options.
2. I would have no problem coping with a career counselor's feedback about possible career options.
3. I am certain that I could handle whatever my career counselor thought about my possible career options, whether it be positive or negative.

Target Efficacy:

1. I feel that a career counselor could adequately provide me with information about possible career options.
2. I feel that a career counselor would be completely honest about which career options are best for me.

Information Seeking

INSTRUCTIONS: Read the following statements and select the answer that best applies to you from 1 (Highly unlikely) to 5 (Highly likely).

1. How likely would you speak to a career counselor about possible career options?
2. How likely would you make an appointment to speak with a career counselor about possible career options?
3. How likely would you contact a career counselor via email, phone, or chat?

Value of Career Counseling

Below are statements pertaining to career counseling. Read each statement carefully and indicate the degree to which you agree or disagree by using the following scale:

- 1 = Disagree
- 2 = Somewhat disagree
- 3 = Neither disagree nor agree
- 4 = Somewhat agree
- 5 = Agree

1. If a career related dilemma arose for me, I would be pleased to know that career counseling services are available.
2. Career counseling can be an effective way to learn what occupation is best suited for my interests.
3. Career counseling is a valuable resource in making a career choice.
4. If I was in a career transition, I would value the opportunity to see a career counselor.

5. If I were having trouble choosing a major, I would not hesitate to schedule an appointment with a career counselor.
6. I could easily imagine how career counseling could be beneficial for me.
7. Working with a trained career counselor might be helpful to feel more confident about career decisions.
8. With so many different ways to get help on career related decisions, I see career counseling as relatively important.

Future Work Self Salience

Imagine what you hope your future would be like in relation to your work or career. Keeping this mental image in your mind, read the following statements and select the answer that best applies to you from a scale of 1 (Strongly disagree) to 5 (Strongly agree).

1. The future is very easy for me to imagine.
2. The mental picture of this future is very clear.
3. I can easily imagine who I will be in relation to my work.
4. I am very clear about who and what I want to become in my future work.
5. The type of future I want in relation to my work is very clear in my mind.

Demographic Information

1. Please indicate your age in the text box below.
2. What is your gender?
 1. Male
 2. Female
 3. Outside of gender binary
 4. Prefer not to disclose
3. Which category best represents your current major?
 - Arts and Humanities
 - Business
 - Health and Medicine
 - Science, Math, and Technology
 - Interdisciplinary Studies
 - Social Sciences
 - Undeclared/Exploratory
 - Other: _____
4. Please check all that apply to your ethnicity.
 - White
 - Hispanic or Latino
 - Black or African American
 - Native American / American Indian
 - Asian / Pacific Islander
 - Other: _____
5. What is your current class standing?

- Freshman
- Sophomore
- Junior
- Senior
- Other: _____

References

- Afifi, W. A., Dillow, M. R., & Morse, C. (2004). Examining predictors and consequences of information seeking in close relationships. *Personal Relationships, 11*, 429-449.
- Afifi, W. A., Morgan, S. E., Stephenson, M. T., Morse, C., Harrison, T., Reichert, T., & Long, S. D. (2006). Examining the decision to talk with family about organ donation: Applying the theory of motivated information management. *Communication Monographs, 73*(2), 188-215.
- Afifi, W. A., & Morse, C. R. (2009). Expanding the role of emotion in the theory of motivated information management. In T. D. Afifi & W. A. Afifi (Eds.), *Uncertainty, information management, and disclosure decisions: Theories and applications* (pp. 87-105). New York, NY, US: Routledge/Taylor & Francis Group.
- Afifi, W. A., & Weiner, J. L. (2004). Toward a theory of motivated information management. *Communication Theory, 14*(2), 167-190.
- Afifi, W. A., & Weiner, J. L. (2006). Seeking information about sexual health: Applying the theory of motivated information management. *Human Communication Research, 32*(1), 35-57.
- Ajzen, I., & Sheikh, S. (2013). Action versus inaction: Anticipated affect in the theory of planned behavior. *Journal of Applied Social Psychology, 43*(1), 155e162.
- Arkes, H. R., Kung, Y., & Hutzel, L. (2002). Regret, valuation, and inaction inertia. *Organizational Behavior and Human Decision Processes, 87*, 371-385.
- Ashforth, B. E. (2001). *Role transitions in organizational life: An identity based perspective*. Mahwah, NJ: Erlbaum.

- Astin, A. W., Korn, W. S., & Riggs, E. R. (1993). *The American freshman: National norms for fall 1993*. Los Angeles: University of California, Graduate School of Education, Higher Education Research Institute.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52, 1-26.
- Brashers, D. E. (2001). Communication and uncertainty management. *Journal of Communication*, 51, 477-497.
- Bell, D. E. (1982). Regret in decision making under uncertainty. *Operations Research*, 30, 961-981.
- Bynner, J. (2001). British youth transitions in comparative perspective. *Journal of Youth Studies*, 4, 5-23.
- Brewer, N., DeFrank, J., Gilkey, M., & Kazak, Anne E. (2016). Anticipated Regret and Health Behavior: A Meta-Analysis. *Health Psychology*, 35(11), 1264-1275.
- Counsell, D. (1996). Graduate careers in the UK: an examination of undergraduates' perceptions. *Career Development International*, 1(7), 44-51.
- Crowley, J. L., & High, A. C. (2018). Parents' information seeking during adolescent career development: a test of the theory of motivated information management. *Journal of Applied Communication Research*, 46(3), 348-367.
- Daniels, L. M., Clifton, R. A., Perry, R. P., Mandzuk, D., & Hall, N. C. (2006). Student teachers' competence and career certainty: The effects of career anxiety and perceived control. *Social Psychology of Education*, 9, 405-423.

- Daniels, L.M., Stewart, T.L., Stupnisky, R.H., Perry, R.P., & LoVerso, T.(2011). Relieving career anxiety and indecision: The role of undergraduate students' perceived control and faculty affiliations. *Social Psychology of Education, 14*, 409-426.
- Danziger, S., & Ratner, D. (2010). Labor market outcomes and the transition to adulthood. *The Future of Children, 20*, 133-158.
- de Barros, A. F. (2015). Crisis, what crisis? – The life goals of university-aged students during an ongoing economic and financial crisis. *Current Psychology, 34*(2), 434-446.
- Dillow, M. R., & Labelle, S. (2014). Discussions of sexual health testing: Applying the theory of motivated information management. *Personal Relationships, 21*, 676-691.
- Duarte, M. E. (2009). The psychology of life construction. *Journal of Vocational Behavior, 75*(3), 259-266.
- Dunkel, C. S. (2000). Possible selves as a mechanism for identity exploration. *Journal of Adolescence, 23*, 519-529.
- Dunkel, C. S., & Anthis, K. S. (2001). The role of possible selves in identity formation: A short-term longitudinal study. *Journal of Adolescence, 24*, 765-776.
- Edwards, J. R. (1996). An examination of competing versions of the person– environment fit approach to stress. *Academy of Management Journal, 39*, 292-339.
- Edwards, W., & Dennis, Wayne. (1954). The theory of decision making. *Psychological Bulletin, 51*(4), 380-417.
- Elliot, A. J., Sheldon, K. M., & Church, M. A. (1997). Avoidance personal goals and subjective well-being. *Personality and Social Psychology Bulletin, 23*, 915-927.

- Fowler, C., & Afifi, W. (2011). Applying the Theory of Motivated Information Management to adult children's discussions of caregiving with aging parents. *Journal of Social and Personal Relationships*, 28(4), 507-535.
- Fowler, C., Gasiolek, J., & Afifi, W. (2018). Complex considerations in couples' financial information management: Extending the theory of motivated information management. *Communication Research*, 45(3), 365-393.
- Frese, M., Garst, H., & Fay, D. (2007). Making things happen: Reciprocal relationships between work characteristics and personal initiative in a four-wave longitudinal structural equation model. *Journal of Applied Psychology*, 92, 1084-1102.
- Garrison, Yunkyong Loh, Lee, Ki-Hak, & Ali, Saba Rasheed. (2017). Career identity and life satisfaction: The mediating role of tolerance for uncertainty and positive/negative affect. *Journal of Career Development*, 44(6), 516-529.
- Gordon, L. & Meyer, J.C. 2002. Career indecision amongst prospective university students. *South African Journal of Psychology*, 32(4), 41-47.
- Gordon, V.N., & Steele, G.E. (2003). Undecided first-year students: A 25-year longitudinal study. *Journal of the First-Year Experience and Students in Transition*, 15, 19-38.
- Graunke, S. S., & Woosley, S. A. (2005). An exploration of the factors that affect the academic success of college sophomores. *College Student Journal*, 39, 367-377.
- Guan, Y., Guo, Y., Bond, M. H., Cai, Z., Zhou, X., Xu, J., ... & Wang, Y. (2014). New job market entrants' future work self, career adaptability and job search outcomes: Examining mediating and moderating models. *Journal of Vocational Behavior*, 85(1), 136-145.

- Hammond, M. S., Lockman, J. D., & Boling, T. (2010). A test of the tripartite model of career indecision of Brown and Krane for African Americans incorporating emotional intelligence and positive affect. *Journal of Career Assessment, 18*, 161-176.
- Hannah, L. K., & Robinson, L. F. (1990). Survey report: How colleges help freshmen select courses and careers. *Journal of Career Planning and Employment, L(4)*, 53-57.
- Hofäcker, D., Buchholz, S., & Blossfeld, H. -P. (2010). Globalization, institutional filters and changing life course. Patterns in modern societies: A summary of the results from the GLOBALIFE-project. In R. K. Silbereisen, & X. Chen (Eds.), *Social change and human development: Concept and results* (pp. 101–124). Thousand Oaks, CA: Sage.
- Janis, I. L. and Mann, L. *Decision Making*, New York: The Free Press, 1977.
- Johnson, J. D., & Meischke, H. (1993). A comprehensive model of cancer-related information seeking applied to magazines. *Human Communication Research, 19*, 343-367.
- Kahneman, D. (1995). Varieties of counterfactual thinking. In N. J. Roese & J. M. Olson (Eds.), *What might have been: The social psychology of counterfactual thinking* (pp. 375-396). New York, NY: Psychology Press.
- Kalleberg, A. L. (2011). *Good jobs, bad jobs: The rise of polarized and precarious employment systems in the United States, 1970s–2000s*. New York, NY: Sage.
- Kalleberg, A. L., Reskin, B. F., & Hudson, K. (2000). Bad jobs in America: Standard and non-standard employment relations and job quality in the United States. *American Sociological Review, 65*, 256-278.
- Kanfer, R., Wanberg, C. R., & Kantrowitz, T. M. (2001). Job search and employment: A personality-motivational analysis and meta-analytic review. *Journal of Applied Psychology, 86*, 837-855.

- Körner, Lechner, Pavlova, & Silbereisen. (2015). Goal engagement in coping with occupational uncertainty predicts favorable career-related outcomes. *Journal of Vocational Behavior*, 88(C), 174-184.
- Krumboltz, J.D., & Worthington, R.L. (1999). The school-to-work transition from a learning theory perspective. *Career Development Quarterly*, 47, 312-325.
- Lancaster, A. L., Dillow, M. R., Ball, H., Borchert, K., & Tyler, W. J. (2016). Managing information about a romantic partner's relationship history: An application of the theory of motivated information management. *Southern Communication Journal*, 81(2), 63-78.
- Landman, J. (1993). *Regret: The persistence of the possible*. New York: Oxford University Press.
- Landman, J. (1987). *Regret: A theoretical and conceptual analysis*. *Journal for the Theory of Social Behaviour*, 17, 135-160.
- Lechner, C., Tomasik, M., & Silbereisen, R. (2016). Preparing for uncertain careers: How youth deal with growing occupational uncertainties before the education-to-work transition. *Journal of Vocational Behavior*, 95-96, 90.
- Lin, S. H., Wu, C. H., & Chen, L. H. (2015). Unpacking the role of self-esteem in career uncertainty: A self-determination perspective. *The Journal of Positive Psychology*, 10(3), 231-239.
- Loomes, G., & Sugden, R. (1982). Regret theory: An alternative theory of rational choice under uncertainty. *Economic Journal*, 92, 805-824.
- Luce, M. F., Bettman, J. R., & Payne, J. W. (1997). Choice processing in emotionally difficult decisions. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 23, 384-405.

- Mandeville, M.Y. (1993). *The effects of communication on career decision making anxiety*.
Paper presented at the annual meeting of the Speech Communication Association,
Florida.
- Markus, H. & Ruvolo, A.P. (1989) Possible selves: Personalized representations of goals, In:
L.A. Pervin (Ed.) *Goal concepts in personality and social psychology*, Pp. 211-291
(Hillsdale, Nj, Lawrence Erlbaum).
- Markus, H. & Nurius, P. (1986) Possible selves, *American Psychologist*, 41, 954-969.
- Mills, M., & Blossfeld, H. P. (2003). Globalization, uncertainty, and changes in early life
courses. *Zeitschrift für Erziehungswissenschaft*, 6, 188-218.
- Morgan, T., & Ness, D. (2003). Career decision-making difficulties of first-year students. *The
Canadian Journal of Career Development*, 2(1), 33-39.
- Niedenthal, P. M., Tangney, J. P., & Gavanski, I. (1994). "If only I weren't" versus "If only I
hadn't": Distinguishing shame and guilt in counterfactual thinking. *Journal of Personality
and Social Psychology*, 67, 585-595.
- O'Hare, M.M., & Tamburri, E. (1986). Coping as a moderator of the relation between anxiety
and career decision making. *Journal of Counseling Psychology*, 33, 255-264.
- Oreopoulos, P., & Petronijevic, U. (2013). Making college worth it: A review of the returns to
higher education. *The Future of Children*, 23, 41-65.
- Orndorff, R. M., & Herr, E. L. (1996). A comparative study of declared and undeclared college
students on career uncertainty and involvement in career development activities. *Journal
of Counseling & Development*, 74(6), 632-639.
- Pisarik, C., Rowell, P., & Thompson, L. (2017). A phenomenological study of career anxiety
among college students. *Career Development Quarterly*, 65(4), 339-352.

- Rauscher, E. A., & Hesse, C. (2014). Investigating uncertainty and emotions in conversations about family health history: A test of the Theory of Motivated Information Management. *Journal of Health Communication, 19*, 939-954.
- Reischel, T. M., & Hirsch, B. J. (1989). Identity commitments and coping with a difficult developmental transition. *Journal of Youth and Adolescence, 18*, 55-69.
- Richard, R., van der Pligt, J., & de Vries, N. K. (1996). Anticipated regret and time perspective: Changing sexual risk-taking behavior. *Journal of Behavioral Decision Making, 9*, 185-199.
- Rothbaum, F., Weisz, J., & Snyder, S. (1982). Changing the world and changing the self: A two-process model of perceived control. *Journal of Personality and Social Psychology, 42*, 5-37.
- Savickas, M. L. (2005). The theory and practice of career construction. In S. D. Brown & R. W. Lent (Eds.), *Career development and counselling: putting theory and research to work*. NJ:Wiley.
- Savickas, M. (2013). Career construction theory and practice. In S. D. Brown & R. W. Lent (Eds.), *Career development and counseling: putting theory and research to work* (2nd ed., pp. 147–183). NJ: Wiley.
- Sandberg, T., & Conner, M. (2008). Anticipated regret as an additional predictor in the theory of planned behaviour: A meta-analysis. *British Journal of Social Psychology, 47*, 589-606.
- Schoon, I. (2007). Adaptations to changing times: Agency in context. *International Journal of Psychology, 42*(2), 94-101.
- Schoon, I., & Silbereisen, R. K. (2009). Conceptualising school-to-work transitions in context. In I., & R. K. (Eds.), *Transitions from school to work: Globalization, individualization*

- and patterns of diversity* (pp. 3–29). Cambridge: University Press.
- Simonson, I. (1992). The influence of anticipating regret and responsibility on purchase decisions. *Journal of consumer research*, 19(1), 105-118.
- Strauss, K., Griffin, M. A., & Parker, S. K. (2012). Future work selves: How salient hoped-for identities motivate proactive career behaviors. *Journal of Applied Psychology*, 97, 580-598.
- Tomasik, M. J., & Silbereisen, R. K. (2012). Social change and adolescent developmental tasks: The case of postcommunist Europe. *Child Development Perspectives*, 6(4), 326-334.
- Uthayakumar, R., Schimmack, U., Hartung, P. J., & Rogers, J. R. (2010). Career decidedness as a predictor of subjective well-being. *Journal of Vocational Behavior*, 77, 196-204.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54, 1063-1070.
- Weissberg, M., Berentsen, M., Cote, A., Carvey, B., & Health, K. (1982). An assessment of the personal, career and academic needs of undergraduate students. *Journal of College Student Personnel*, 23, 115-122.
- Winjberg, C. (2000). The new face of AIDS...With new drug treatments, HIV/AIDS may not always be an automatic death sentence: But have we been lulled into a false sense of security? *Louisville Eccentric Observer*, p. 14.
- Zeelenberg, M. (1999). Anticipated regret, expected feedback and behavioral decision making. *Journal of Behavioral Decision Making*, 12, 93-106.

Zeelenberg, M., Beattie, J., Van der Pligt, J., & De Vries, N. K. (1996). Consequences of regret aversion: Effects of expected feedback on risky decision making. *Organizational behavior and human decision processes*, 65(2), 148-158.